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A NEW SPECIES OF *BERCHMANSUS* (NEUROPTERA: CHRYSOPIDAE) AND NOMENCLATURAL NOTES ON *B. ELEGANS* (GUÉRIN MÉNEVILLE)

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Abstract.—***Berchmansus brooksi*, n. sp.**, is described from Brazil and Panama; it constitutes the fourth species in the rarely collected Neotropical genus. Externally, the new species closely resembles *Berchmansus elegans* (Guérin Méneville 1844), but the male and female genitalia differ significantly. The discovery of *B. brooksi* demonstrates that what was previously considered a single, easily recognized species comprises at least two cryptic species. A lectotype and paralectotypes are designated for *Hemerobius elegans* Guérin Méneville (the original designation for *B. elegans*), and the monophyly of *Berchmansus* is discussed.

Key Words: Chrysopidae, Belonopterygini, new species, Brazil, Panama

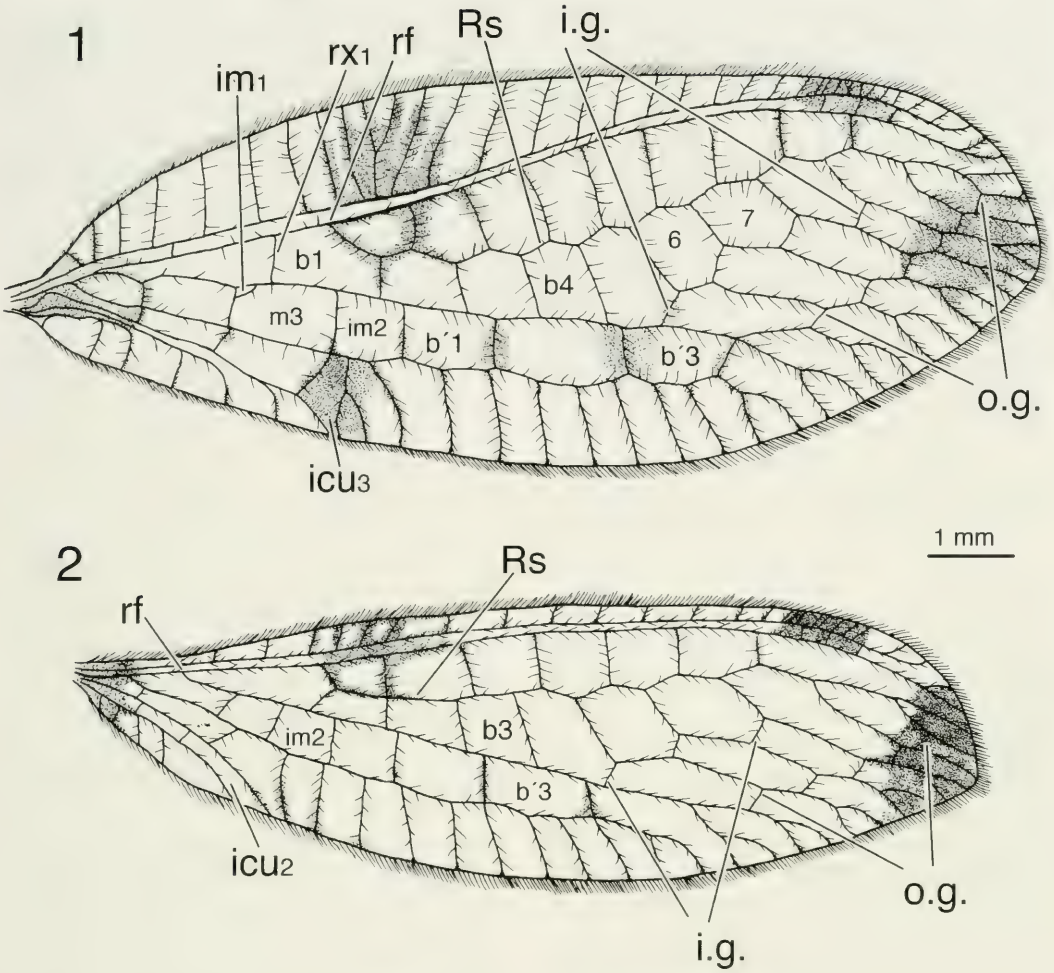
In a recent paper, Tauber et al. (2006) redescribed *Berchmansus elegans* (Guérin Méneville 1844); the redescription included male and female genitalia and the first-instar larva. During the study, the possibility of a new *Berchmansus* species became apparent when S. Brooks (The Natural History Musuem, London, BMNH) noted that the male genitalia in our drawings of *B. elegans* differed from those attributed to *B. elegans* in Brooks and Barnard (1990). My subsequent comparison of the BMNH specimens with the *B. elegans* types showed that the specimen depicted in Brooks and Barnard's figs. 481 and 483 was not *B. elegans*. Rather, it belongs to a new species that closely resembles *B. elegans*.

The green lacewing genus *Berchmansus* Navás, 1913, currently contains three rarely encountered Neotropical species that until recently have received very little attention. Navás (1913) erected the genus with a short description of external adult features of one species, *Berchmansus adambratus* Navás, 1913. Later, two more species were moved into *Berchmansus* [*B. elegans* (Guérin Méneville 1844) and *B. cinctipes* (Banks 1915)]. In this paper I describe a fourth species.

Although the number of available specimens is small (five) and the external features of the two species are similar, the distinctive genitalic characters leave no doubt that the new species differs from the previously described species. I hope that description of this species will stimulate neuropterists, and insect collectors in general, to search for specimens of the rarely encountered *Berchmansus* and to be alert to the possibility of other new, cryptic species that resemble *B. elegans*.

MATERIALS AND METHODS

Nomenclature for adult characters (head, mouthparts, wings and genitalia) follows that in current usage (Tillyard 1916; Snodgrass 1935; Tjeder 1966; Adams 1967, 1977; Brooks and Barnard



Figs. 1–2. *Berchmansus brooksi*, wings. 1, Forewing. 2, Hindwing. b1, b3, b4, first, third and fourth upper Banksian cells; b'1, b'3, first and third lower Banksian cells; i.g., inner gradate series; icu2, icu3, second and third intracubital cells; im1, im2, first and second intramedian cells; m3, third median cell; o.g., outer gradate series; rf, furcation of radius and radial sector plus media anterior; Rs, radial sector; rx1, first radial crossvein; 6, 7, sixth and seventh cells beneath Rs (= first two cells beneath Rs, free of pseudomedial).

1990; Tauber 2003). Measurement of head width was made across the widest part of the dorsum of the head and includes the eyes; the ratio of head width:eye width used the distance between the eyes (mid-vertex) and the mean width of the left and right eyes (mid-dorsal) (consistent with Brooks and Barnard 1990). Wing width was measured at the widest part of the wing. All measurements were made with N.I.H. Image J software.

Berchmansus brooksi Tauber, new species
(Figs. 1–3, 5–10)

Diagnosis.—*Berchmansus brooksi* and *B. elegans* are very similar in many respects (for *B. elegans*, see Tauber et al. 2006). They share a unique set of traits that distinguish them from all other

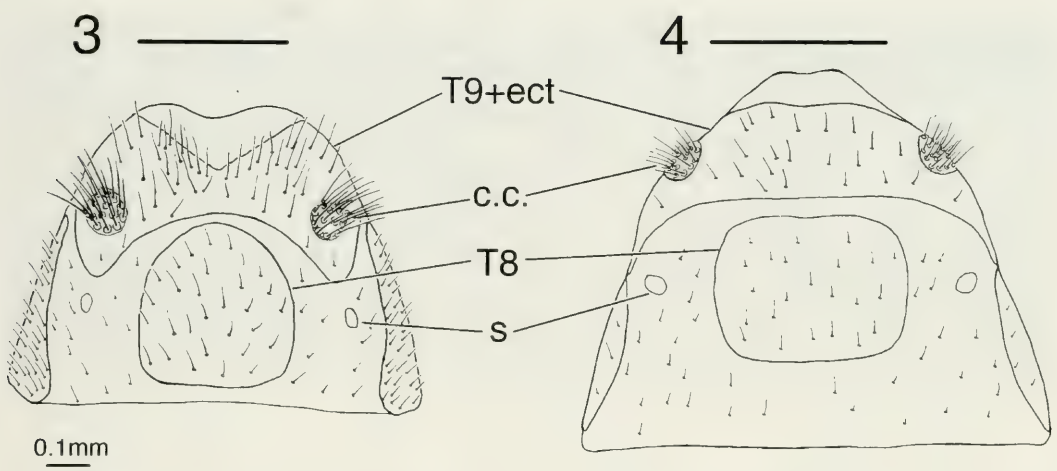
Neotropical species, most notably: (1) body with large dark brown areas and patches of robust dark setae, (2) broad wings with bold dark brown markings, (3) male genitalia with a large, quadrate "hood" consisting of three sclerotized sides and a fourth membranous side that is attached to the gonarcal complex, and (4) female with a doughnut-shaped spermatheca, elongate velum with a bilobed base and longitudinal dorsal slit opening into the bursa, and a broad subgenitale with membranous anterior fold and mesal lobe.

Externally, *B. brooksi* and *B. elegans* differ only slightly—mainly in body and wing size, small venational features, and the shape of their terminal abdominal segments. The *B. brooksi* forewing is ~11.4–11.7 mm long as compared to *B. elegans*' forewing of 13.6–15.2 mm. The large, midcostal marking on the *B. elegans* forewing includes four to six simple crossveins; the marking on the *B. brooksi* forewing includes six crossveins, the mesal one of which is bifurcated. And, the fused ninth tergite and ectoprocts of the male are rounded distally in *B. brooksi*, as opposed to truncate in *B. elegans* (Figs. 3, 4).

Internally, the male *B. brooksi* differs from *B. elegans* in having a broad, relatively flat mediuncus, an elaborate gonarcal "hood" that is positioned beneath the mediuncus, a gonarcus with an elongate processus that articulates with the "hood," and a hypandrium internum that is attached to the gonosaccus immediately below the "hood," rather than distant from it (Figs. 5–7). The female differs from *B. elegans* in that its subgenitale has a deep fold at the base of the posterior section, but no protruding ventral process, its bursal duct is fluted, and the bursal membrane is spiney. In *B. elegans* the bursal duct is wrinkled and folded, but without distinct spines.

Description.—*Head:* 1.3 mm wide; ratio head width to eye width = 1.8–2.2:1 (similar to *B. elegans*); sutures not visible. Vertex slightly concave, with small transverse fold posteriorly, short, dark brown setae laterally; surface smooth anteriorly, laterally, rough in depression. Torulus medium-sized, 0.04–0.05 mm deep frontally. Frons with heavy, rounded, crescent-shaped ridge above clypeus (below toruli). Clypeus with small longitudinal ridge mesally, with proximal margin strongly convex; distal margin entire. Labrum with distal margin slightly cleft mesally. Gena 0.08–0.11 mm long; ratio, genal length:distance between tentorial pits = 0.21–0.29. Antenna (paratype) shorter than wings, 10.0 mm long; scape robust, as broad as long, with long setae anteriorly; proximal segments of flagellum short (segments 2–3: length = 0.6–1.2 times width), with three concentric rings of setae; middle and distal segments longer (segments 6–9: length = 1.8–2.0 times width), with four concentric rings of setae. Mandible, maxilla, labium not dissected; submentum with robust, dark brown setae.

Head coloration: Frons with prominent paired, crescent-shaped dark brown areas, small cream-colored areas laterally near genae. Clypeus brown mesally, laterally, cream colored proximally below frons, cream-colored crescent-shaped area from eyes to anterior tentorial pits. Torulus cream colored ventrally. Labrum light brown mesally, cream colored laterally. Gena with dark brown stripe, white below. Vertex cream colored mesally, with pair of broad dark brown lateral stripes on margin of raised area, cream-colored strip between eye and posterolateral edge of raised area; thin brown band adjacent to eye; torulus brown dorsally. Scape dark brown dorsally, frontal surface light brown, with thin dark brown ring on distal margin; pedicel cream colored basally, brown distally; flagellum with three basal segments brown mesally, pale laterally; remainder of flagellum cream colored.



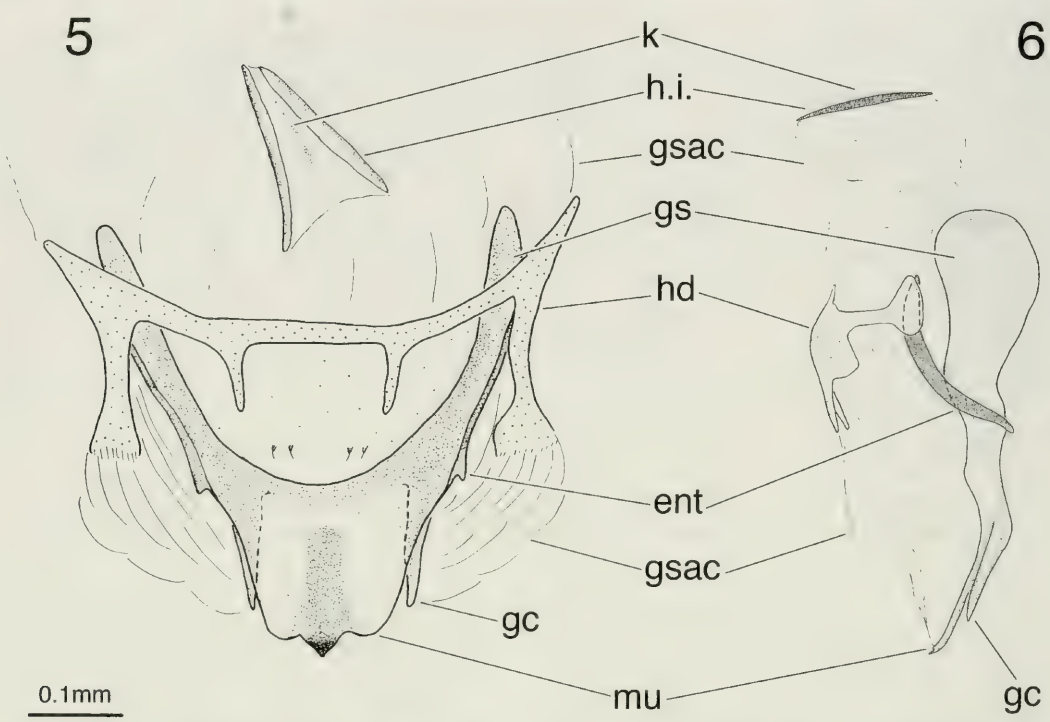
Figs. 3–4. Male abdomen, terminal segments, dorsal. 3, *Berchmansus brooksi*. 4, *B. elegans*. c.c., callus cercus; s, spiracle; T8, eighth tergite; T9+ect, fused ninth tergite and ectoproct. Scale above terminus = width of gonarcus.

Mandible, maxilla, labium, palpi, stipes, submentum brown to dark brown.

Thorax: Cervix cream colored, with broad reddish-brown lateral stripes. Prothorax short: 0.65–0.66 mm long; 0.84–0.90 mm wide; cream colored to tan, probably yellow or light green in life, with long pale setae. Mesothorax, metathorax brown; mesonotum with pair of cream-colored to light brown spots on prescutum, each bearing patch of long, heavy, dark setae; metaprescutum without long dark setae. Leg setose, white, except mesocoxa, metacoxa light brown.

Wings (Figs. 1, 2): Forewing (Fig. 1) 11.4–11.8 mm long, 4.3–4.5 mm wide. Costal area broad; tallest costal cell (#10–11) 1.0–1.3 mm tall; 3.6–4.6 times width; setae at base of costa dark brown, much darker than distal setae on costa; single crossvein in basal part of subcostal area, located approximately one-third distance between first medio-cubital crossvein and furcation of media posterior; first intramedian cell 0.46–0.60 width of third intramedian cell. First radial crossvein basal to origin of radial sector; radial area [between radius (R) and radial sector (Rs)] with single row of 7–10 closed cells; tallest cell 1.2–1.5 times taller than wide. Three upper Banksian cells; first two cells beneath Rs, free of pseudomedia (sixth and seventh cells beneath Rs) slightly shorter than those of *B. elegans*; e.g., ratio of height:width = 1.3–1.6:1 (c.f., 1.8–2.1:1 in *B. elegans*). Three lower Banksian cells; five apparent pseudomedial crossveins (including first and second media posterior); last closed cell beneath Psm (b'3) similar in length to that in *B. elegans* (height:width = ~0.5); first cubital crossvein located at or near second medio-cubital crossvein; two closed intracubital cells (icu); icu1 0.8 or 0.9 (male)–1.1 (female) times length of icu2. Two series of gradates; 3–4 inner gradates, 5–6 outer gradates. Vein 1A forked. Hindwing (Fig. 2) 9.8–10.4 mm long, 3.1–3.2 mm wide. M and Rs apparently fused near base; 7–8 closed radial cells (between R and Rs); three upper Banksian cells; three lower Banksian cells; one closed intracubital cell. Two series of gradates; 1–3 inner gradates, 4–5 outer gradates.

Wing coloration: Surface of wing hyaline, marked with dark brown spots; veins pale (probably green in life), with slight brownish hue in spotted areas. Forewing with large dark brown, fan-



Figs. 5–6. *Berchmansus brooksi*, male genitalia. 5, Ventral view. 6, Lateral view. ent, entoprocessus; gc, gonocornu; gs, gonarcus (lateral apodeme); gsac, gonosaccus; hd, hood; h.i., hypandrium internum; k, keel; mu, mediuncus.

shaped mark encompassing costal crossveins 9–15; dark brown cloudiness on base of Rs, radial crossveins 1, 2, 7, 8, pseudomedial crossveins 2–4, icu3, and adjacent cells; large dark brown spot at tip of wing. Hindwing with large dark brown cloudiness on costal crossveins 7–10, base of Rs, radial crossvein 1, subcosta and radius in area of dark crossveins; large dark spot at tip of wing; small brown marks at very base of wing.

Abdomen: Robust, not particularly distended distally. Callus cerci circular, with approximately 22 trichobothria; central trichobothria larger than those on margins. Tergites elongate, slightly narrow (~4–5 times longer than wide, as measured from dorsal midline to ventrolateral margin); lateral margins smooth; with long robust setae, numerous microsetae. Fused tergite 9 and ectoprocts rounded posteriorly (Fig. 3; middorsal suture may be present). Sternites 2–8 with numerous, long setae, microsetae (setae denser and longer than on *B. elegans*).

Cream colored with dark brown dorsally on segments 4, 5, proximal ⅓ of segment 6; distal ⅔ of segment 6, segment 7 dark brown throughout; segment 8 cream colored, with dark brown marks anterolaterally. Callus cerci cream colored.

Male (Figs. 3, 5–7): Tergites 3–8, sternites 2–9 with microtholi. T9+ect with dorsal apodeme curved slightly upward above callus cerci. Sternite 9 very short (shorter than *B. elegans*), weakly sclerotized, bearing ~3 closely spaced rows of heavy elongate setae.

Gonarcus arcuate, thin, with lateral apodemes narrow, slightly bowed, with pair of elongate, curved gonocornua laterally, with pair of small angular

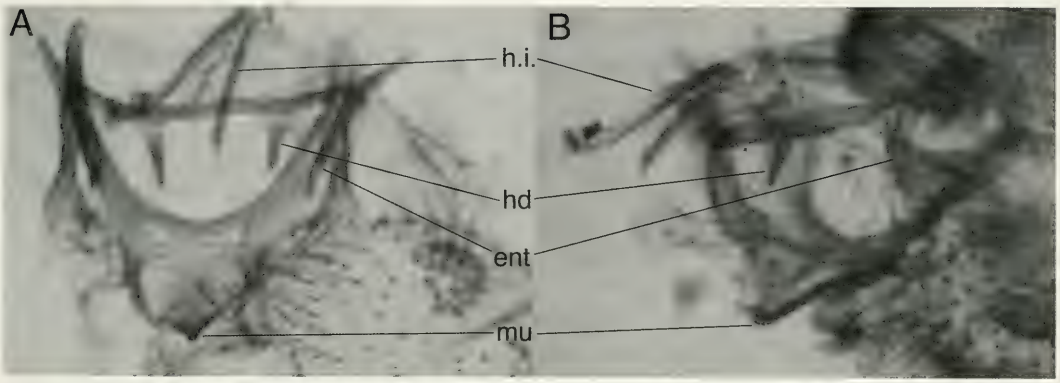


Fig. 7. *Berchmansus brooksi*, male genitalia. A, Ventral view. B, Ventrolateral view. ent, entoprocessus; hd, elongate process extending from hood; h.i., hypandrium internum; mu, tip of mediuncus.

entoprocesses below gonocornua. Mediuncus broadly attached to dorsum of gonarcal arch, truncate, projecting outward; terminus with three small terminal lobes, lateral two appearing rounded (apparently with membranous covers), central one beaklike. "Hood" resting below mediuncus, with three thin sclerotized sides and membranous base and center attached to mediuncus; lateral two sides broad, curved upward, articulating with gonarcus distally on entoprocessus; central side straight mesally, curved downward laterally, with pair of long, thin processes extending from mesal section; center of hood membranous, transparent, probably contiguous with gonosaccus. Gonosaccus (incomplete) clear, probably consisting of two parts: one beneath mediuncus, second distal to hood; with two pairs of small papillae near base of mediuncus; each papilla bearing short seta. Hypandrium internum attached to gonosaccus near hood, narrow V-shaped with small keel (comes), arms of V not connected at apex. Parameres, gonapsis, pseudopenis absent.

Female (Figs. 8–10). Terminus of S7 well sclerotized, emarginated, with long, robust setae. Gonapophysis lateralis ~half the height of T9+ectoproct, rounded distally, straight basally, tall, narrow (height ~2.5–3 times width), with medium-length, delicate setae. Transverse sclerification above colleterial gland large, heavily sclerotized, with dense bristles. Colleterial gland elongate, delicate. Subgenitale broad in ventral view, very narrow in lateral view, well sclerotized, distal section with deep fold dorsally, above which is the basal section of bursal membrane; beneath which is the bilobed sclerotized body of the subgenitale; no protruding ventral process below lobes. Terminus of subgenitale bilobed; area between lobes deep, with gonocristae on margins. Membrane below subgenitale extending beneath S7, bearing pronounced lobelike process. Bursa copulatrix large, extending anteriorly into S6, connected ventrolaterally to spermathecal velum via convoluted bursal duct with fluted sides; bursal membrane with numerous sclerotized spines. No bursal glands found. Spermatheca doughnut-shaped, with elongate, tubular velum; invagination funnel-shaped, with sharp anterior bend where it enters velum; velum bilobed, with elongate slit between lobes, opening to bursa. Spermathecal duct leaving spermatheca posterodorsally, curved several times on itself, midsection extending into and leaving subgenitale; distal ¼ expanded, very setose; tip bifurcated.

Type material.—Holotype male, slightly moldy; abdomen cleared, unstained,

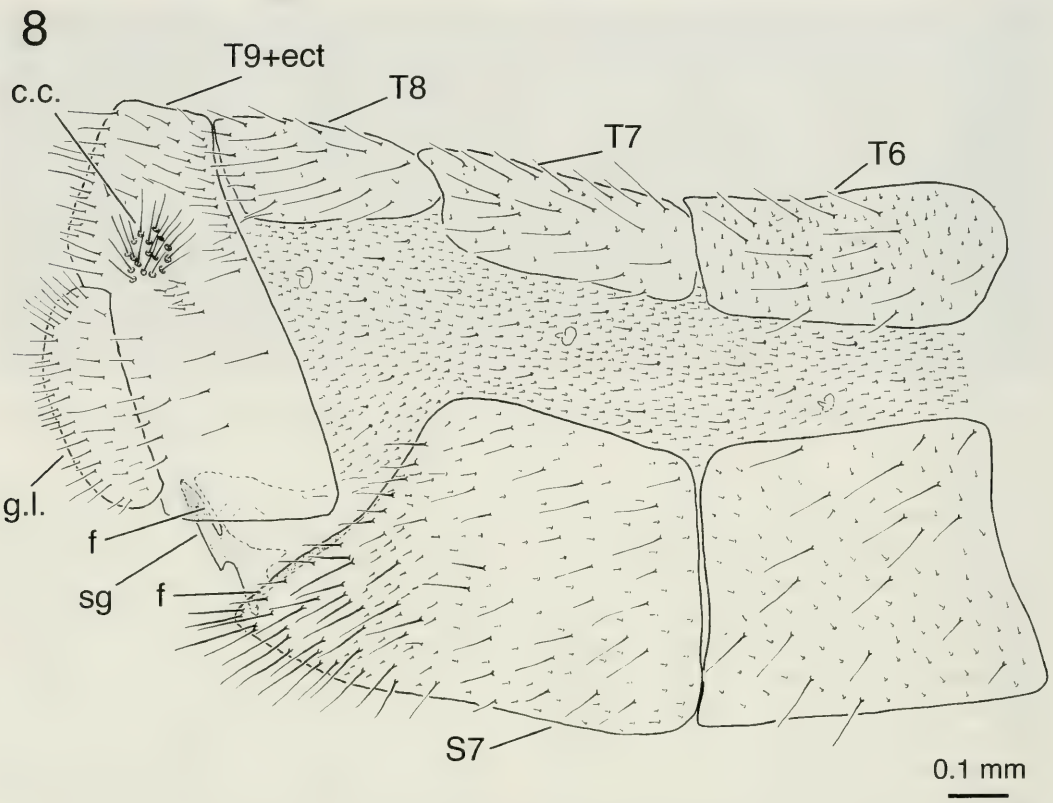


Fig. 8. *Berchmansus brooksi*, female. Terminal segments of abdomen (lateral, exterior). c.c., callus cerci; f, fold; g.l., gonapophysis lateralis; S7, seventh sternite; sg, subgenitale; T6, T7, T8, sixth, seventh, and eighth tergites; T9+ect, fused ninth tergite and ectoproct.

very delicate, torn in several places, in glycerin, genitalia vial. Upper label: blue dot label reading "Santar em" on the top and "53 72" on the bottom. [The locality probably is Santarém, which is on Brazil's Amazon River, in the state of Pará, ~700 km west of Belém.] Label #2: white label, folded, reading "*Berchmansus elegans* male, det. S. J. Brooks, 1980". Label #3: "HOLOTYPE *Berchmansus brooksi* Tauber, desig. C. A. Tauber 2006". In the collection of The Natural History Museum, London.

Allotype female, pinned specimen, one pair of wings spread, genitalia (slightly teneral) cleared, stained (CAT), in glycerin, genitalia vial. Upper label: "Panama: Canal Zone; Barro Colorado Isl. 9 May 1978. Silberglied/Aiello. In Barbour House". Label #2: folded, reading "*Berchmansus elegans* (Guerin). Det. Flint 2002". Label #3: "ALLOTYPE *Berchmansus brooksi* Tauber, det. C. A. Tauber 2006". In the National Museum of Natural History, Washington, D.C.

Paratype female, pinned specimen, probably recovered from alcohol, wings crumpled, genitalia cleared, stained lightly (CAT), in glycerin, genitalia vial. Upper label: "Panama: Colon Prov. Santa Rita Ridge, 17 km. E transisthmian hwy., 400 m, VI-16-1996. A. R. Gillogly". Label #2: Bar code, TAMU-ENTO, X0063936. Texas A & M University. Label #3: "PARATYPE *Berchmansus brooksi* Tauber, det. C. A. Tauber 2006." In the collection of Texas A&M University, College Station.

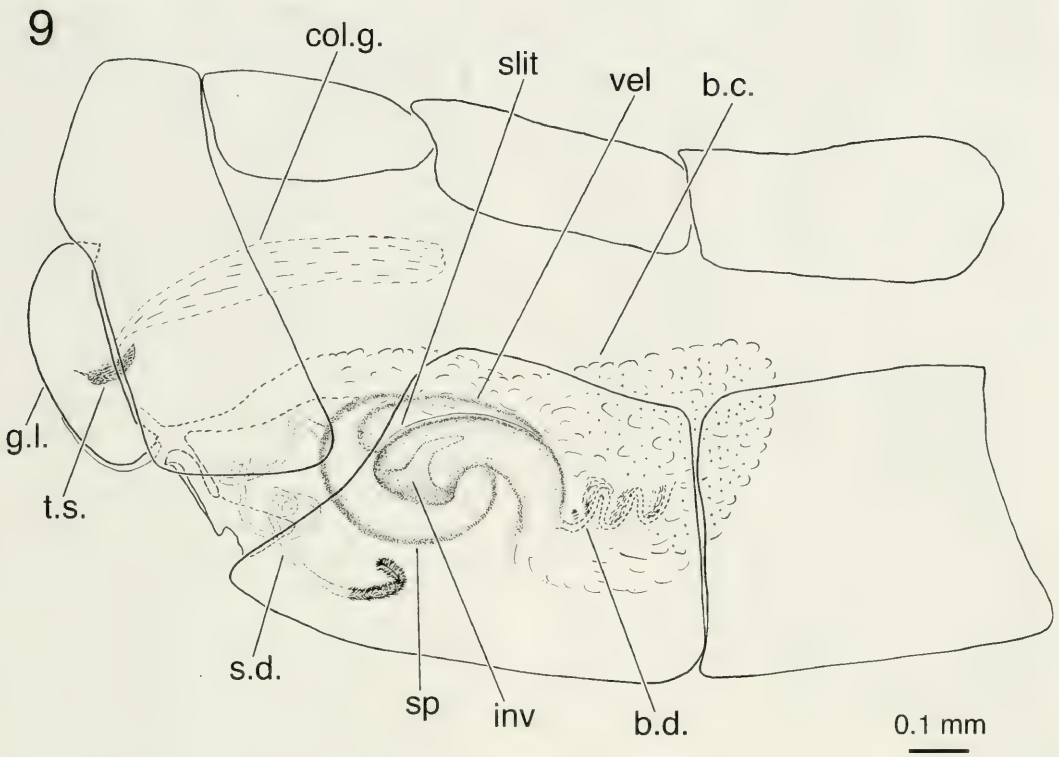


Fig. 9. *Berchmansus brooksi*, female. Terminal segments of abdomen (interior, lateral). b.c., bursa copulatrix; b.d., bursal duct; col.g., colleterial gland; f, fold; g.l., gonapophysis lateralis; inv, spermathecal invagination; slit, slit-like opening of spermathecal velum into bursa copulatrix; sp, spermatheca; s.d., spermathecal duct; t.s., transverse sclerification; vel, velum.

Paratype female, pinned specimen, genitalia cleared, stained (CAT), in glycerin, genitalia vial. Upper label: "Canal Zone, Barro Colorado". Label #2: folded, reading "Berchmansus elegans (Guerin) female, det. P. Adams '90". Label #3: "PARATYPE *Berchmansus brooksi* Tauber, det. C. A. Tauber 2006". In the Museum of Comparative Zoology, Harvard University, Cambridge, Mass.

Additional specimen: pinned, sex unknown (abdomen missing). Upper label: "Prov. del Sara, Bolivia. 450 m. J. Steinbach". Label #2: "Carn. Mus. Acc. 4545." Label #3: folded, reading "Berchmansus new species. det Penny 97". Label #4: "*Berchmansus brooksi* Tauber, det. C. A. Tauber 2006". In the Carnegie Museum of Natural History, Pittsburgh, Pa.

Known distribution.—Panama, Amazonian regions of Bolivia and Brazil.

Etymology.—This species is named in honor of Dr. Stephen J. Brooks, Department of Entomology, The Natural History Museum, in recognition of his contribution to the classification of Chrysopidae.

Remarks.—*Tribal Affiliation:* Our earlier study demonstated that *B. elegans* has a much stronger affinity with the cosmopolitan tribe Belonopterygini than with the Neotropical Leucochrysini, to which it was previously assigned (Tauber et al. 2006). The evidence was primarily from larval characters, but it also included a number of adult characters. *Berchmansus brooksi* exhibits the same belonopterygine adult characters as *B. elegans* (i.e., those that I could examine without destructive dissection), as follows:

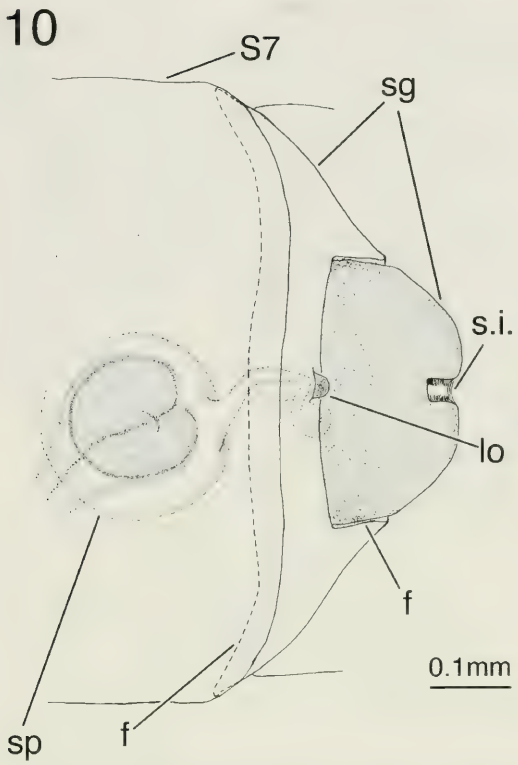


Fig. 10. *Berchmansus brooksi*, female. Subgenitale and spermatheca (ventral). f, fold; lo, lobe; S7, seventh sternite; sg, subgenitale; sp, spermatheca (lateral).

1. Maxillary and labial palps. Leucochrysini: tapered apically; Belonopterygini: round apically.

   Both *B. brooksi* and *B. elegans* fit the description for Belonopterygini. However, there is considerable variation in this trait among leucochrysine species. Thus, the diagnostic value of the character is questionable.
2. Toruli. Leucochrysini: small; Belonopterygini: usually large.

   Both *B. brooksi* and *B. elegans* have relatively large toruli, as is typical for most belonopterygines.
3. Flagellar segments. Leucochrysini: three or more times as long as broad; Belonopterygini: at most two times as long as broad.

   In *B. brooksi*, the length:width ratio of the flagellar segments is very low; thus like *B. elegans*, it clearly resembles the belonopterygine condition. Its range of 0.6–2.0 is even lower than the 1.1 to 2.2 for *B. elegans*.
4. Flagellar setae. In both Leucochrysini and Belonopterygini, the flagellar setae typically are arranged in four rings per segment (Tjeder 1966, Brooks and Barnard 1990).

   In both *B. brooksi* and *B. elegans*, most antennal segments fit this description, but some of the proximal flagellar segments have only three rows of setae. In this regard, they are similar to the belonopterygine genus *Dysochrysa* (see Tjeder 1966: 335).
5. Forewing. Leucochrysini: cell icu1 shorter than icu2; Belonopterygini: cell icu1 longer than icu2.

   In *B. brooksi*, icu1 is ~0.8× the size of icu2 (Fig. 1); thus, like *B. elegans* (icu1 ~0.7 × icu2), it resembles the typical leucochrysine condition. However, this character is variable among belonopterygine species, and the value of the character in differentiating the tribes is open to reassessment (Tauber et al. 2006).
6. Male genitalia. Leucochrysini: parameres absent; Belonopterygini: parameres usually present.

   The previous report of parameres in *B. elegans* probably is in error; rather, the elongate, paired structures attached to the gonosaccus (Fig. 23 of Tauber et al. 2006) appear to be enlarged and heavily sclerotized vas deferens. Thus, it appears that both *B. elegans* and *B. brooksi* lack parameres, a state that more closely resembles the leucochrysine, than the belonopterygine condition. Whether the vas deferens in *B. brooksi* is heavily sclerotized remains unknown; such a structure is not present in the *B. brooksi*

holotype and it was not illustrated by Brooks and Barnard (1990).

7. Female genitalia. Praegenitale (sclerotized structure separate from and anterior or ventral to the subgenitale lobes). Leucochrysini: praegenitale absent; Belonopterygini: usually present. *B. brooksi* has a rounded, perhaps sclerotized, lobelike process on the anteroventral surface of the genitale. This process does not resemble the sclerotized process on *B. elegans*; it is more similar to *B. elegans*' membranous anterior process. Thus, in this character, *B. brooksi* appears more similar to the leucochrysine condition.

In summary, although *B. brooksi* has a number of leucochrysine characteristics, it also expresses several important traits that fall within the belonopterygine condition, especially the relatively short antennae and flagellomeres and the three concentric rings of setae on the basal flagellomeres. I strongly suspect, that like *B. elegans*, *B. brooksi* belongs in the tribe Belonopterygini.

Monophyly of Berchmansus: As it is currently constituted, the genus *Berchmansus* differs from other chrysopid genera on the basis of a single defining characteristic. In all four *Berchmansus* species, the first radial crossvein arises from the Radius before the origin of the Radial sector. However, the four species vary in a number of significant ways, and the monophyly of the group is in question (Brooks and Barnard 1990, Tauber et al. 2006).

Specimens of the other two *Berchmansus* species (including the type species of the genus) are very scarce, and I have not yet studied them. Thus, I remain uncertain about both their tribal affiliations and the monophyly of the genus.

Genital structures: The gonarcal "hood" that both *B. elegans* and *B. brooksi* possess is an unusual structure among chrysopids, and it merits some comments. First, it appears to be homologous in the two species; the basic structure and shape are very similar in both species. Second, it appears to be a very labile character. In *B. elegans*, it is a relatively simple structure with three unadorned, sclerotized sides; in *B. brooksi* the distal side bears a pair of elongate, narrow teeth (Figs. 5–7). Also, in our specimens of *B. elegans* from the State of Rio de Janeiro, the "hood" is located above the gonarcus and the basal membrane is attached to the gonarcus above the mediuncus; thus we referred to the structure as a "hood" (Tauber et al. 2006). In comparison, *B. brooksi*'s "hood" is positioned below the mediuncus and appears to articulate with the elongate entoprocessus that extend from the gonarcal arch (Figs. 6, 7). Its membranous base is contiguous with the gonosaccus that extends from the gonocornua and the mediuncus. It is noteworthy that in the holotype of *B. elegans* (which was dissected before I viewed the specimen), the "hood" is detached from the abdomen; it remains attached to the gonarcus below the mediuncus. It appears to have flipped to the ventral position.

Nomenclatural Notes on *B. elegans*

John D. Oswald recently pointed out (personal communication) that the chrysopid species name "*Berchmansus elegans* (Guérin Méneville 1844" is a junior homonym of the hemerobiid species name *Sympherobius elegans* (Stephens 1836) [*Hemerobius*]. No replacement names are available for *Berchmansus elegans*. Oswald is preparing a petition requesting that the International Commission on Zoological Nomenclature use its plenary powers to preserve the name "*elegans*" for Guérin Méneville's chrysopid. Therefore, I am continuing to use the name "*elegans*" for this species in accordance with Articles 23.9.5 and 82 of

the International Code of Zoological Nomenclature (1999).

Guérin Méneville (1844) described *B. elegans* (as *H. elegans*) from a series of six specimens that are deposited in the Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium. In 1999 Penny labeled one of the specimens as "HOLOTYPE, Chrysopa timberlakei, det. Penny, 99", an obviously inadvertent error. I have retained Penny's designation of this specimen (male genitalia only) as the "type", and to ensure the stability of the name I am designating it as the lectotype. The specimen now bears an additional label reading: "LECTOTYPE, *Hemerobius elegans*, det. C. A. Tauber, 2005". The other labels on this specimen are as follows: "elegans Gué"; "Collection Ede Sélys Longchamps"; "Berchmansus elegans Guerin, det. S. J. Brooks, 1985"; "Cl.3." in blue; "181" in green.

Each of the other five specimens bear a label designating it as a "Paralectotype, Berchmansus elegans, det. Penny, 99"; these labels do not refer to the original name of the species. I concur with Penny's designation of these five specimens as paralectotypes; they are now labeled "PARALECTOTYPE, *Hemerobius elegans*, det. C. A. Tauber, 2005". The other labels on the five paralectotypes are as listed below; "(??)" follows words or designations that I could not decipher with certainty:

1. "C. elegans Guérin Siku (??) *"; "Collection Ede Sélys Longchamps"; "Cl." in blue; "180" in green.
2. "Brasil, Para (??)"; "Collection Ede Sélys Longchamps".
3. "Brasil, Para (??)"; "Collection Ede Sélys Longchamps".
4. "Brasil, Balem (??), 1921 (??); "R. Mus. Hist. Nat Belg. 1.G.14.182".
5. "Collection Ede Sélys Longchamps"; "Berchmansus elegans Guerin, det. S. J. Brooks, 1985"; "Cl. 3." in green.

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